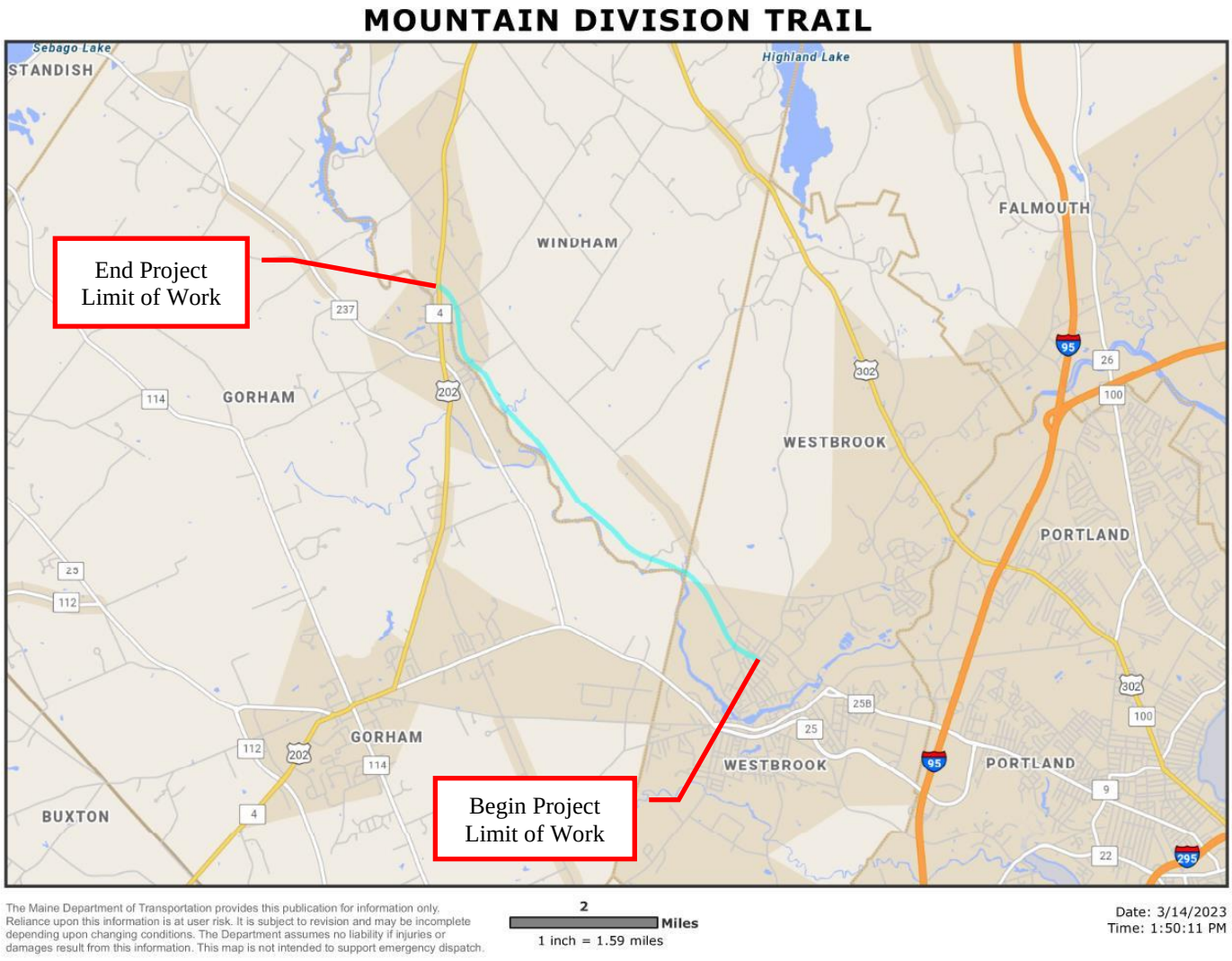
# Preliminary Design Report - Locally Administered Project

***Project Name:*** *Mountain Division Trail Project*
***WIN:*** *26576.00*

***Draft Distribution Date:*** *05/12/2023*
***Final Distribution Date:*** *06/05/2024*
***Revised Final PDR Submittal:*** *07/02/2024*

| | | |
|---|---|---|
| **Town:** Westbrook & Windham | **Route:** N/A | **WIN:** 26576.00 |
| **State Project No:** 26576.00 | **Federal Project No:** N/A | |
| **Project Type:** Trail with Rail Project (Mountain Division Railroad) | | |
| **Project Location:** The project is located on the north side of the existing Mountain Division Railroad. The project begins at Bridge Street in Westbrook and extends north approximately 5.02 miles to Main Street (Route 202) in Windham. | | |
| **Length:** 5.02 Miles | **BMP:** N/A | **Begin Latitude/Longitude:** 43.686058, -70.36334 |
| | **EMP:** N/A | **End Latitude/Longitude:** 43.739074, -70.426091 |
| | | |
| **Program:** Multimodal Program - LAP | | **Program Manager:** Jeff Tweedie |
| **Project Manager:** Jerry Dostie | | **Designer:** Gorrill Palmer |
| **FHWA Oversight:** No | | **Engineer of Record:** Jared S. Winchenbach |

**LOCATION MAP**


MOUNTAIN DIVISION TRAIL
Sebago Lake
STANDISH
Highland Lake
FALMOUTH
WINDHAM
End Project
Limit of Work
GORHAM
WESTBROOK
PORTLAND
GORHAM
WESTBROOK
PORTLAND
BUXTON
Begin Project
Limit of Work
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2
Miles
1 inch = 1.59 miles
Date: 3/14/2023
Time: 1:50:11 PM

## PLANNING

**Project History:** The project originally came about after the Town of Windham applied to the Maine DOT's Quality Community Program, seeking monies for the design and construction of the approximately 5-mile multi-use trail (see project information below). In 2012, a preliminary design and draft PDR report for the Mountain Division Trail (with Rail) Project (original WIN 019423.00) was developed and submitted to the Maine DOT, the City of Westbrook, and Town of Windham for review. The project was put on hold due to insufficient funding and has been dormant ever since. In 2022, the Town of Windham, combined with the City of Westbrook, and the Maine DOT to re-open the project as a Windham led Locally Administered Project (LAP), under a new WIN (26576.00). The project will look to update the design (to meet current standards) and progress the project to the next milestone (Plan Impacts Complete).

**Purpose & Need:** The purpose of the project is to extend the Mountain Division Trail from its current terminus at Main Street (Route 202), in Windham, approximately 5.02 miles south to Bridge Street in Westbrook. This extension will create a continuous (approximately 10-mile in total) off-road bicycle and pedestrian transportation link from Standish to Westbrook (5 miles existing trail and 5 miles proposed under this project). The project will fulfill the needs of an ever-growing population of trail users that have recognized the value of the existing trail and will benefit greatly from its extension into the City of Westbrook.

**Brief Summary of Proposed Scope of Work:** This Project entails the preliminary design of approximately 5.02 miles of a multi-use trail (with rail) facility. The project includes the design of a 10' wide (8' minimum) paved multi-use trail adjacent to the existing Mountain Division Railroad Line. This project will connect to the existing Mountain Division Trail head located at Main Street (Route 202) in Windham, ME. Work on this project will include new pavement, gravel, curbing, drainage, signing and striping, retaining walls, and fencing. Additional work includes the installation of a new rectangular rapid flashing beacon (located at the trail crossing on Bridge Street in Westbrook) as well as removing and resetting the existing rectangular rapid flashing beacon(s) (located at the trail crossing(s) on Depot Street and Main Street (Route 202) in Windham).

**Scope changes:** The project was originally scoped to go from Draft PDR to Final PSE, however, the scope has been revised to include the following:

- Added Northeast Civil Solutions (Subconsultant) to update survey and right of way files.
- Added Flycatcher LLC (Subconsultant) to complete the environmental summary and wetland flagging.
- Included additional Geotechnical design tasks for R.W. Gillespie & Associates (Subconsultant).
- Redesign the Draft PDR plans as discussed on the original project site visit (held on 10/26/2022).
- Reduced the design efforts to go up to the Plan Impacts Complete submittal instead of Final PSE.
- The project is proposing a prefabricated steel pedestrian bridge over Mallison Falls Road, a structural subconsultant will need to be brought on to complete the design of the bridge.
- Maine DOT has decided to initiate two (2) separate WINs to hire a bridge firm to evaluate the Inkhorn Brook and Colley Wright Brook stone arch culverts, impacts to this project will be further evaluated as these projects progress.

## TRAFFIC

***Intersections****:* There are six (6) proposed mid-block trail crossings within the project limits, there are no significant changes to any of the roadway footprints or intersections because of this project.

**Design Vehicle (without encroachment):** This is a trail with rail project along the Mountain Division Railroad and does not alter the geometry (or turning movements) of any intersections within the project limits.

**Design Vehicle (with encroachment):** This is a trail with rail project along the Mountain Division Railroad and does not alter the geometry (or turning movements) of any intersections within the project limits.

**Auxiliary Lanes:** No auxiliary lanes are required for this project.

***Crash Data***

**Analysis Period:** 2021-2023: Westbrook and Windham were reviewed using the Maine DOT Crash Query Tool (for both intersections and roadway segments). Special attention was paid to areas where the existing railroad (future location of the trail) is crossing a roadway. Based on our review, there are no high crash locations within or adjacent to the project.

**High Crash Locations (including Critical Rate Factor and number of crashes):** There are no high crash locations associated with this project.

## DESIGN CRITERIA – Multi-Use Trail

1. **General Design Criteria:**
   a. AASHTO "Guide for the Development of Bicycle Facilities", 2012, 4th Edition.
   b. Maine DOT "Minimum Standards for Development of Trail with Rail", September 2014.
   c. MaineDOT "Standard Details", March 2020, with updates.
   d. Maine DOT "Standard Specifications", March 2020, with updates.
   e. Maine DOT "Drainage Design Practice and Procedures".
   f. Federal Highway Administration (FHWA) and Federal Railroad Administration (FRA) "Rails with Trails, Best Practices and Lessons Learned", March 2020.

**Trail Design Criteria**

2. **Geometric Layout:**

   Trail geometry shall be established based on the guidelines set forth in the documents noted in section 1 (above) and as outlined below. Exceptions to these criteria may be required and will be reviewed on

a case-by-case basis. Any deviation from the proposed guidelines that result in a non-compliant feature will be flagged to the City of Westbrook, the Town of Windham, and the Maine DOT for review.

3. **Horizontal Geometry**

   a. Trail Speed: AASHTO recommends bicycle trail design speeds between 12 to 30 mph, with a speed of 18-mph being generally accepted in relatively flat areas (<2%). Based on this information a design speed of 18-mph was used.

   b. Horizontal Alignment: The horizontal alignment will be generally constrained by the adjacent near rail of the railroad track. The Maine DOT "Minimum Standards for Development of Trail with Rail" states that the near edge of trail shall be set back a minimum of fifteen feet (15') from the near rail. Exceptions to this minimum standard may be granted to allow the near edge of trail to fall between 11.5' and 15' with approval from the Maine DOT. Lateral shifts will be proposed where applicable to minimize drainage and property impacts, as well as to improve the constructability of the trail and its features (walls, fences, etc.).

   c. Minimum Radius: The minimum radius of horizontal curvature for bicyclists is based upon a lean angle of 20°. Minimum radii based upon this lean angle is presented in AASHTO's "Guide for the Development of Bicycle Facilities" Table 5-2, for design speeds ranging from 12 to 30 mph. The minimum radius for an 18-mph design speed is 60 ft.

4. **Vertical Geometry**

   a. Vertical Alignment: The vertical alignment of the trail will be generally constrained between the existing rolling and gully-filled topography adjacent to the existing (and future) rail line. Vertical curves will be introduced where applicable to minimize drainage and property impacts, as well as to improve the constructability of the trail and its features (walls, fences, etc.). The vertical alignment will be constrained by the minimum/maximum vertical grade as well as by the minimum stopping sight distance as noted below.

   b. Minimum Grade: The minimum desirable grade is 0.5% to maintain adequate surface drainage.

   c. Maximum Grade: The maximum grade of the trail profile shall not exceed 5% to comply with current ADA standards for running slope.

   d. Stopping Sight Distance (SSD) for Crest Curves: The minimum SSD for crest curves varies and is completely dependent upon the approach grade (%). In AASHTO's "Guide for the Development of Bicycle Facilities" Table 5-4, Minimum Stopping Sight Distance, provides a formula to calculate the minimum stopping sight distance based on the speed (18 mph), the coefficient of friction (0.16 for a typical bike), and the grade of the trail.

      - The eye height of a typical adult bicyclist is assumed to be 4.5 ft, and the object height is assumed to be 0 in. to recognize that impediments to bicycle travel exist at pavement level.

5. **Typical Section**

   a. Trail Width: The preferred trail width is 10'. The trail may be reduced to an 8' minimum for short distances where a physical barrier or right of way does not allow for the full width of the trail.

   b. Trail Cross Slope (Minimum/Maximum): The preferred trail cross slope for drainage purposes and as noted in the Maine DOT "Minimum Standards for Development of Trail with Rail" is 2.0%.

      - The minimum trail cross slope to comply with the current ADA standards is 0.5%.
      - The maximum trail cross slope to comply with the current ADA standards is 2.0%.

   c. Shoulder Width: The preferred shoulder width is 3' to 5'. The minimum shoulder width is 2'. Graded shoulders less than 2' in width will require a design exception from the Maine DOT.

      - The proposed design maintains 1' shoulders and has obtained a design exception from the Maine DOT (see applicable section):

   d. Shoulder Cross Slope: Cross slopes for trail shoulders shall be graded at 6:1 or flatter.

      - The proposed shoulder cross slope matches the trail cross slope (2%) since the shoulders are not adequately wide to construct a separate grade.

   e. Side Slope: The preferred side slope is 4:1 or flatter, however, grades as steep as 2:1 are acceptable if fencing criteria (see applicable sections) are met. Slopes steeper than 2:1 shall be riprapped and will require approval from a licensed geotechnical engineer.

6. **Clear Area**

   a. Horizontal Clearance: 2' minimum clearance from the edge of trail will be provided with a maximum 6:1 slope to lateral obstructions such as bushes, large rocks, trees, and poles.

      - This clearance may be reduced to 1' when a fence is installed adjacent to the trail.

   b. Vertical Clearance: Tree clearing, and limb removal shall be completed as necessary to provide a "clear zone" measuring 10' high by the width of the trail plus the shoulders.

      - For this project minimum clearing height of 20' is required to ensure that maintenance and emergency vehicles can access the trail as needed.

7. **Drainage Design**

   a. Minimum Ditch Grades: Ditches shall be graded to have a minimum running slope of 0.3% (1.0% preferred) adjacent to the trail.

   b. Trail Grading: The subgrade and surface of the trail shall be graded to drain away from the rail line unless adequate drainage is provided by the trail developer to prevent trail runoff through the ballast structure, and providing that no impediments to normal rail line maintenance results.

8. **Fencing Requirements**

   a. A 6’ fence shall be provided 1’ off the proposed edge of pavement (between the proposed trail and the existing railroad) where the proposed separation between the nearest rail, and the nearest edge of pavement for the trail is between 11.5’ and 15’.

   b. A 4’ fence shall be provided 1’ off the proposed edge of pavement if any of the following conditions apply:

      - The proposed side slopes are 3:1 or greater and the total height of the embankment is greater than 6’ vertically.
      - The proposed side slopes are 3:1 or greater and are adjacent to a parallel body of water (or another substantial obstacle).
      - The proposed side slopes are 2:1 or greater and the total height of embankment is greater than 4’ vertically.
      - Proposed side slopes where riprap is present in fill and/or along the fore slopes of ditches.
      - There is a proposed retaining wall (where the top of wall is at grade with the trail) that is running parallel with the trail.

9. **Trail Materials**

   a. Trail Surface: The trail shall be paved with a minimum of 3” of hot mix asphalt as it will be maintained year-round.

      - The Town of Windham has requested that the Maine DOT consider the use of stone dust along this section of the trail as a lower cost alternative.

   b. Shoulder Surface: The shoulders shall be graded with loam and seed at a minimum.

      - This project proposes using 3” of untreated aggregate surface course in the shoulders.
      - If stone dust is utilized as a trail surface, we would likely extend it into the shoulders instead of using untreated aggregate surface course, making one 12’ wide trail.

10. **Miscellaneous:**

    a. Bollards: Collapsible bollards will be placed at trail intersections (both roads and private crossings) and have a minimum spacing of 4’.

    b. Equestrian Use: Equestrian use will be allowed on this trail.

    c. Snowmobile Passage: Snowmobile passage may be accommodated by removing the middle bollard during winter months.

    d. Future Railroad Considerations: The existing railroad ends at approximately Sta. 691+29. The trail beyond that point was designed to maintain a minimum 11.5’ offset measured from the proposed

edge of pavement to the approximate future location of the nearest rail as located via as built and right of way (VAL) plans.

## DESIGN CRITERIA - Roadways

***Basic Design Controls***

| | **Main Street** (Windham) | **Bridge Street** (Westbrook) | **Minor Roads* (25 MPH)** | **Minor Roads** (30 MPH)** |
|---|---|---|---|---|
| **Corridor Priority** | 2 | 4 | 5 | 5 |
| **Functional Class** | Minor Arterial | Local | Local | Local |
| **NHS/Non-NHS** | Non-NHS | Non-NHS | Non-NHS | Non-NHS |
| **Posted Speed** | 25 MPH | 25 MPH | 25 MPH | 30 MPH |
| **2023 AADT (Current)** | 7420 | 5643 | 2376 | 990 |
| **2043 AADT (Design)** | N/A | N/A | N/A | N/A |
| **DHV** | N/A | N/A | N/A | N/A |
| **Scope (choices below)** | Spot Improvements | Spot Improvements | Spot Improvements | Spot Improvements |
| (New Construction, Reconstruction, Rehabilitation, Restoration/Resurfacing, Spot Improvement | | | | |

* Minor Roads (25 mph) include Pierce Street (Westbrook), Stillwater Drive (Westbrook), Rousseau Road (Windham), and Mallison Falls Road (Windham).
**Minor Roads (30 mph) include Depot Street (Windham).

***Controlling Criteria***

| **Element** | Required Standard | Required Standard | Required Standard | Required Standard |
|---|---|---|---|---|
| | **Main Street** (Windham) | **Bridge Street** (Westbrook) | **Minor Roads* (25 MPH)** | **Minor Roads** (30 MPH)** |
| **Design Speed** | 25 MPH | 25 MPH | 25 MPH | 30 MPH |
| **Lane Width** | 11’ - 12’ | 11’-12’ | 11’-12’ | 11’-12’ |
| **Shoulder Width** | 3’ - 5’ | 3’ – 4’ | 1’ – 3’ | 1’ – 3’ |
| **Horizontal Curve Radius** | 154’ | 154’ | 250’ | 250’ |
| **Superelevation Rate** | 4% | 4% | 4% | 4% |
| **Stopping Sight Distance** | 155’ | 155’ | 200’ | 200’ |
| **Maximum Grade** | 8% | 10% | 10% | 10% |
| **Cross Slope (Travelway)** | 1.5% - 2.5% | 1.5% - 2.5% | 1.5% - 2.5% | 1.5% - 2.5% |
| **Vertical Clearance** | Bridge: 15’<br>Other: 17’ | Bridge: 15’<br>Other: 17’ | Bridge: 15’<br>Other: 17’ | Bridge: 15’<br>Other: 17’ |
| **Clear Zone** | 10’ | 10’ | 10’ | 10’ |

***Typical Section***

| Element | Proposed Value | Proposed Value | Proposed Value | Proposed Value |
|---|---|---|---|---|
| | **Main Street** (Windham) | **Bridge Street** (Westbrook) | **Minor Roads* (25 MPH)** | **Minor Roads** (30 MPH)** |
| **Lane Width** | Match Existing | Match Existing | Match Existing | Match Existing |
| **Shoulder Width** | Match Existing | Match Existing | Match Existing | Match Existing |
| **Cross Slope (Travelway)** | Match Existing | Match Existing | Match Existing | Match Existing |
| **Side Slopes*** | 3:1 or Flatter | 3:1 or Flatter | 3:1 or Flatter | 3:1 or Flatter |

**If side slope standards cannot be met, no Design Exception will be required. If not meeting side slope standards results in clear zone standards not being met, a clear zone design exception will be required.*

## DESIGN EXCEPTION SUMMARY

☐ **No design exceptions are required.**

***Controlling Criteria***

| Element | Required Standard | Proposed Value | Date Approved |
|---|---|---|---|
| Trail Shoulder Width (SW) | 2.0’ | 1.0’ | 03/02/2023 |

***Drives and Entrances*** – No driveway/entrance design exceptions have been identified at this time.

| Station | Maximum Grade | Grade Change | Date Approved |
|---|---|---|---|
| | | | |

## PAVEMENT STRUCTURE

**Pavement Assessment Report (Title and Location):** N/A

**Design Review Date:** 06/25/2024

**Design Guidance Subgrade Soil Type (1-5):** N/A

## PAVEMENT STRUCTURE – WIDENINGS

**Pavement Structure - Widenings**

| Design Method | Design Guidance | | DARWin 3.1 | |
|---|---|---|---|---|
| **Layer** | **Thickness** | **Type** | **Thickness** | **Type** |
| **Hot Mix Asphalt Pavement** | 4” or 6” | 12.5mm | TBD | TBD |
| **Recycled Layer** | N/A | N/A | TBD | TBD |
| **Base Course Gravel** | N/A | N/A | TBD | TBD |
| **Subbase Course Gravel** | 24” | ASCG – Type D | TBD | TBD |
| **Shoulder Pavement** | 4” or 6” | 12.5mm | TBD | TBD |

**Pavement Design Coachpoint Date:** N/A

**Final Pavement Structure - Widenings**

| Design Method | Design Guidance | | DARWin 3.1 | |
|---|---|---|---|---|
| **Layer** | **Thickness** | **Type** | **Thickness** | **Type** |
| **Hot Mix Asphalt Pavement** | 4” or 6” | 12.5mm | TBD | TBD |
| **Recycled Layer** | N/A | N/A | TBD | TBD |
| **Base Course Gravel** | N/A | N/A | TBD | TBD |
| **Subbase Course Gravel** | 24” | ASCG – Type D | TBD | TBD |
| **Shoulder Pavement** | 4” or 6” | 12.5mm | TBD | TBD |

**Comments:**

Pierce Street (Westbrook), Stillwater Drive (Westbrook), Rousseau Road (Windham), and Mallison Falls Road (Windham), and Depot Street (Windham):

The current design assumes 4” hot mix asphalt on 24” aggregate subbase course gravel – type “D”. The only paving on the project (aside from the multi-use trail, the cross trench (Stillwater Drive), the sidewalks, and the driveways) is within the existing roadway shoulders, in sawcut areas where curbing (various types) is being installed.

Main Street (Route 202) (Windham), and Bridge Street (Westbrook):

The current design assumes 6” hot mix asphalt on 24” aggregate subbase course gravel – type “D”.

10’ Multi-Use Trail:

The current design assumes 3” hot mix asphalt on 12” aggregate subbase course gravel – type “D”. The design assumes that the trail will be maintained year-round and will require winter maintenance vehicles.

**Additional Comments:**

The 403-spec request form was developed and submitted to the Maine DOT on June 9, 2023. We have not received the draft 403 spec at this time.

## COMPLETE STREETS COMPLIANCE

*A Complete Street provides safe and efficient access to the transportation system to all users. Each element of a Complete Street shall be considered according to the guidelines in the* MaineDOT Complete Streets Policy.

**Select the Complete Streets elements incorporated into the project:**

☒ **Sidewalks**

Sidewalks along Main Street (Route 202), Bridge Street, Depot Street, Pierce Street, and Stillwater Drive will need to be reconstructed to provide ADA compliant tip downs for the multi-use trail's mid-block crossing of the referenced roadways.

☒ **Crosswalks**

Crosswalks are proposed at all non-driveway crossings as well as the proposed mid-block crossing.

☐ **Lighting (street or pedestrian scale)**

☒ **Pedestrian Signals**

A pair of new rectangular rapid flashing beacons will be placed at the following mid-block crossing: Bridge Street (Westbrook).

There are existing rectangular rapid flashing beacons that will be removed and reset at the following mid-block crossings: Main Street (Route 202) (Windham), and Depot Street (Windham).

☐ **Streetscaping (benches, landscaping, etc.)**

☐ **Shoulder Improvements**

☒ **Bike Lanes/Shared Use Paths**

A 10' wide multi-use trail with 1' gravel shoulders is proposed along the north side of the existing Mountain Division Railroad Line. The trail will have fencing as noted in the Maine DOT Trails with Rails Guidance as well as the ASSHTO Guide for the Development of Bicycle Facilities.

☐ **Public Transit (bus stops, etc.)**

☐ **Other (explain)**

**Summarize:**
The proposed 10' wide multi-use trail provides a roadway (and vehicle) free trail experience similar to the Eastern Trail and/or the existing section of the Mountain Division Trail with Rail that begins at Main Street (Route 202) in Windham and continues up into Standish. The trail will connect seven (7) sideroads and multiple neighborhoods within Westbrook and Windham and provide opportunities for non-vehicular modes of transportation.

**Select the most applicable reason(s) these elements may not be incorporated into the project:**

☐ **Use by pedestrians, bicyclists, and others is prohibited by law.**

☐ **The cost is disproportionate to the need or probable use.**

☒ **Components are outside the scope, due to the nature of the project.**

**Summarize:**
Lighting, streetscaping, shoulder improvements, and public transit have not been considered at this time as they were not included in the original scope of the project.

## ADA COMPLIANCE

*Pedestrian facilities shall be upgraded to comply with the* MaineDOT ADA Compliance Policy for Construction and Maintenance *and the* Minimum ADA Requirements for Pedestrian Facilities Design Guidance.

**Select all that apply:**

☐ **No pedestrian facilities exist on the project, and none will be installed.**

☐ **Existing pedestrian facilities will not be upgraded to ADA compliance based on project scope.**

☒ **New pedestrian ADA compliant facilities will be installed where none previously existed.**

☒ **Existing pedestrian facilities will be upgraded to ADA compliance unless technically infeasible.**

☒ **Pedestrian signals will be installed or upgraded if required.**

**Summarize:** Based on the current Maine DOT ADA policy, the minimum improvements for this scope of work states that; pedestrian facilities shall be constructed or upgraded to meet current ADA requirements within the project limits.

An ADA compliant, 10' wide multi-use trail will be constructed on the northside of the existing Mountain Division Railroad Line starting at Bridge Street in Westbrook and extending North approximately 5.02 miles to Main Street (Route 202) in Windham, where it will connect to the existing portion of the Mountain Division Trail.

Sidewalks along Main Street (Route 202), Bridge Street, Depot Street, Pierce Street, and Stillwater Drive will be reconstructed to provide ADA compliant tip downs for the multi-use trail's mid-block crossing of the referenced roadways.

Rectangular rapid flashing beacons will be installed at the mid-block crossing located on the following streets: Main Street (Route 202) (Windham), Depot Street (Windham), and Bridge Street (Westbrook).

*If a new or upgraded curb ramp cannot fully comply with the* MaineDOT ADA Compliance Policy for Construction and Maintenance *and the* Minimum ADA Requirements for Pedestrian Facilities Design Guidance*, an* ADA Technical Infeasibility Form *must be submitted for approval for each location identified.*

☒ **No technical infeasibility forms are required to be completed at this time.**

☐ **Technical infeasibility forms have been submitted as indicated in the table below.**

| Curb Ramp ID/Location | Reason Full Compliance Infeasible | Date Approved |
|---|---|---|
| | | |

**Summarize:** Based on our review, no technical infeasibility forms are required at this time. We are designing the proposed trail to have a running slope between 0.5% and 5.0% and a cross slope between 0.5% and 2.0%. We will cut existing roadway profiles along sideroads and reconstruct the sideroads as required to achieve ADA compliant cross slopes. If ADA compliance cannot be achieved at the sideroads, we will develop and submit technical infeasibility forms to the Maine DOT for approval. This work will be completed prior to the draft PIC submittal.

## ENVIRONMENTAL COORDINATION

*(To be completed by the Environmental Office)*
**Team Member:** Danielle Tetreau (Maine DOT) and Jared Winchenbach (Gorrill Palmer)

| | |
|---|---|
| **Project Scope/Description** | Trail with Rail Project along the Mountain Division Railroad Line. |
| **NEPA Determination** | TBD (Municipality led) (1). |
| **STIP Date** | No federal funding on this project. |
| **Section 106** | TBD (Municipality led) (2). |
| **Section 4(f)** | No federal funding on this project – does not apply. |
| **Section 6(f)** | TBD (Municipality led). |
| **Federal Endangered Species** | Northern long-eared bat: may affect, clearing amount = 14.5 AC<br>Atlantic Salmon: no effect, no in water work. (3) |
| **State Endangered Species** | *Unknown at this time (3).* |
| **Essential Fish Habitat** | Atlantic salmon: no effect, no in water work (3). |
| **Fish Passage Design Review** | Not applicable. |
| **In-Stream Work Window/Other Construction Restrictions** | No construction restrictions anticipated. |

| | |
|---|---|
| **Hazardous Material** | TBD (4). |
| **Dredge Material** | Dredging may be required at the culvert extensions. |
| **Stormwater/MS4** | Municipality (5) responsible for required approvals. |
| **DEP/LUPC** | Municipality (5) responsible for required approvals. |
| **ACOE** | Municipality (5) responsible for required approvals. |
| **Mitigation** | Not expected to be required. |
| **Other** | Not applicable |

1) The NEPA process will be completed during final design.
2) Section 106 letters for MHPC and Native American Tribes will be sent out.
3) Endangered species and habitat letters will be coordinated.
4) MaineDOT will help determine if there are any hazardous materials in the project area.
5) The towns consultant will help review environmental permitting needs for the project and assist the town with filling out the necessary forms to complete the work.

Additional Comments:

1. Maine DOT has completed preliminary engineering efforts for two stone arch culverts (Inkhorn Brook (bridge #7756) and Colley Wright Brook (bridge #7757)) that will need to be replaced/rehabilitated prior to the construction of the trail. This work is not considered as part of this project currently and has been issued separate WIN numbers (WIN 027694.00 and WIN 027696.00, respectively).
2. Flycatcher LLC completed an environmental summary for the project which included a findings memo, maps, photos, and supplemental forms for the project.

## RIGHT-OF-WAY COORDINATION

**Team Member:** Andy Johnson (Maine DOT) and Jared Winchenbach (Gorrill Palmer)

| | **Westbrook** (Sta. 500+00 to Sta. 546+73) | **Westbrook** (Sta. 546+73 to Sta. 563+70) | **Windham** (Sta. 563+70 to Sta. 588+22) | **Windham** (Sta. 588+22 to Sta. 771+74) |
|---|---|---|---|---|
| **Total Existing Width:** | 66’ | 99’ | 82.5’ | 66’ |
| **Total Proposed Width:** | Matches Existing | Matches Existing | Matches Existing | Matches Existing |
| | | | | |
| **# of Abutters:** There are 88 abutters (42 in Westbrook, and 46 in Windham) on this project. | | | | |
| **# of Acquisitions:** We expect that approximately 74 parcels (38 in Westbrook, and 36 in Windham) will require temporary construction easements due to slope grading and clearing beyond the existing right of way. In addition, we expect approximately 44 drainage easements (15 in Westbrook, and 29 in Windham) to be required. Some locations of permanent slope easements may also be required. We do not anticipate any permanent right of way takes will be required. | | | | |
| **# of Relocations:** None | | | | |
| **Building Availability:** N/A | | | | |
| **Reserved Limits:** None known | | | | |

Additional comments:

## UTILITY COORDINATION

**Utility Coordinator:** Jared Winchenbach (Gorrill Palmer)

**Above Ground Utilities:** At&T (Portland Office), Central Maine Power Company, Charter Communications Inc., Consolidated Communications of Northern New England Company LLC, Lightower Fiber Networks, Maine Fiber Company, MaineCom Services, OTT Communications (South), Oxford Networks, Portland Cellular Partnership d/b/a Verizon Wireless, Revolution Networks (aka NECAP), and Revolution Networks (aka NECAP) dba Firstlight.

**Below Ground Utilities:** Brookfield Renewable Energy Partners, L.P., Buckeye Partners, Central Maine Power Company, City of Westbrook, Consolidated Communications of Northern New England Company LLC, Granite State Gas Transmission, Inc., Maine Natural Gas, Maritimes Northeast Pipeline, Portland Natural Gas Transmission System, Portland Pipe Line Corporation, Portland Water District, the Town of Windham, and Unitil Corporation.

**Railroads:** Maine DOT Railroad, and Springfield Terminal Railway.

| | **Necessary for this Project? (Yes or No)** | **Coordination Still Needed? (Yes or No)** |
|---|---|---|
| **Pole List:** | Yes | Yes |
| **Utility Agreements**: | TBD | Yes |
| **RR PRTS:** | TBD | Yes |
| **Railroad Agreement:** | TBD | Yes |

**ROW issues related to utilities:** No right of way issues related to utilities have been identified at this time.

**Additional Comments:**

1) Sta. 587+10: The trail crosses a singular CMP transmission line that runs parallel with the trail before crossing the alignment at the noted Station.
    - The trail will have no effect on this transmission line.
2) Sta. 606+90 to Sta. 611+90: The trail crosses a 500’ wide CMP easement (aerial corridor) that runs perpendicular to the trail.
    - The trail will have no effect on this aerial corridor).
3) Sta. 606+90 to Sta. 611+90 (somewhere in the CMP aerial corridor): The trail crosses a high-pressure natural gas transmission line that runs perpendicular to the trail.
    - The trail will have no effect on this gas line as we are not proposing to cut the ground any deeper than the existing ditch (additional coordination with Portland Natural Gas will be required prior to the draft PIC submittal to confirm the depth of the transmission line).

## GEOTECHNICAL COORDINATION

*(To be completed by the Geotechnical Section)*
**Team Member:** Erik Wiberg (R.W. Gillespie & Associates, Inc.)

**Available Soils Information:** Boring samples are being collected by R.W. Gillespie.

**Additional Borings Required?** Yes, R.W. Gillespie & Associates, Inc. is completing borings at wall locations as well as areas of steep fills. The boring locations and boring logs will be incorporated into the plans prior to the draft PIC submittal.

**Additional Geotechnical Analysis Required?** Yes, R.W. Gillespie & Associates, Inc. is evaluating conditions at wall locations as well as areas of steep fills (steep fills are considered slopes of 2:1 or steeper). Currently the project does not have any fills steeper than 2:1, however, large fill areas will be re-evaluated in final design and fills steeper than 2:1 will be considered. Information will be provided to the department prior to the draft PIC submittal.

**Comments by Geotechnical Engineer:** Provided to the Maine DOT prior to the draft PIC submittal.

**Are foundations for Overhead Sign Structures, Traffic Signals or Lighting Required?** No, the only foundations that are set to be installed on the project are the 24-inch diameter foundations for the rectangular rapid flashing beacons.

## PUBLIC PROCESS

**Proposed Public Contact Method and Date(s):** Public Meeting was held on May 31, 2023, at 7:00pm. The meeting was held both in person at the South Windham Fire Station (33 Main Street, Windham) as well as online Via Zoom. There were members from the design team both on zoom as well as in person to help answer questions.

**Concerns Identified at Preliminary Public Meeting:**

1) There were privacy concerns from the houses that are close to the proposed location of the trail and whether privacy fences would be included as part of the project.

<u>Additional public questions/comments received during the meeting:</u>

1) Will the proposed sections of fence have a maintenance schedule to avoid them falling into disrepair? Some of the sections of fence in the northern section of the trail (North of Route 202) are in rough shape.
2) Will property owners who have land on both side of the railroad tracks still have access to both properties?
3) Rousseau Road (Windham) and Stillwater Drive (Westbrook) are both private roads (maintained by a homeowner's association), they request that no parking signs be installed along their road as part of the project and that construction vehicles will not be permitted to use their roads to access the trail during construction without prior authorization.

4) Can the existing railroad tracks be removed, and the trail be placed on top of the existing railroad bed?
5) Have options other than asphalt been considered for the treatment of the trail?
6) Will the railroad bed still be available for snowmobiles? Can the bollards be removed in the winter months to allow access?
7) Is the fence between the trail and the railroad necessary since there are no active trains on this stretch of rail?
8) Concerns regarding public parking for the trail, where will recreational users park when they want to use this facility (especially the Westbrook section).
9) Will other trails connect into this trail? Is there a master trail plan?

## M&O ISSUES /CONCERNS

None anticipated at this time.

## CONSTRUCTION SCHEDULE

| | |
|---|---|
| **PS&E Date** | 03/25/26 |
| **Advertise Date** | 04/15/2026 |
| **Construction Begin Date** | 08/03/2026 |
| **Construction Complete** | 11/26/2027 |

## TAME RESULTS *(Transfer results from returned Tame Request Form)*

| | |
|---|---|
| **Morning Restrictions** | None specified. |
| **Evening Restrictions** | None specified. |
| **Maximum Closure Length** | None specified. |
| **Minimum Lane Width** | One 11-foot-wide lane of alternating traffic. |

**Additional Comments:** TAME request was signed by the Maine DOT on September 6, 2023.

## BUDGET

| | **Programmed** | **Available** | **PDR Estimate** |
|---|---|---|---|
| **Date** | 07/25/2022 | 07/25/2023 | 06/05/2024 |
| **Preliminary Engineering** | $450,000.00 | $450,000.00 | $750,000.00 |
| **Right of Way** | $0.00 | $0.00 | $350,000.00 |
| **Construction** | $0.00 | $0.00 | $10,850,000.00 |
| **Construction Engineering** | $0.00 | $0.00 | $750,000.00 |
| **Other** | - | - | |
| **TOTAL** | $450,000.00 | $450,000.00 | $12,700,000.00 |
| **Total Cost per Mile:** | - | - | - |
| **Funding Strategy *(Sources)*:** | This project is not funded for construction, PE only. | | |

## SUMMARY OF PRELIMINARY ENGINEERING

***Alternatives Analysis***
*(This may only be applicable to some projects, such as Large Culverts, Rehabilitations, and Roundabouts.)*
This section is not applicable to this project.

**Design Variances**
*(Discuss design elements that do not meet standard but do not require a formal design exception)*
There are no design variances that have been identified at this time.

***Proposed Design Elements***
*(Discuss existing vs. proposed condition)*

**Horizontal Alignment:**
The horizontal alignment for the trail was derived as a balance between the existing (and future) railroad and the Maine DOT Right of Way, using the AASHTO "Guide for the Development of Bicycle Facilities", 2012, 4th Edition design standards. As much as possible the design is a standard offset from the construction baseline (nearest rail). The horizontal alignment works with the profile to minimize cuts and fills by working its way along the ridgelines and down into the ravines of the project. The meandering sections of trail will add interest and engage trail users in addition to its cost and resource savings.

The trail is proposed on the north side of the existing (and future railroad) up until Sta. 759+50, where it utilizes an existing access road to cross the future railroad. This crossing is important as the existing Mountain Division Trail at Main Street (Route 202) is on the south side of the railroad. We believe that crossing at the access road provides a safe transition and allows the perpendicular crossing of Main Street.

The actual location of the trail, river side versus non-river side was determined during the original design completed by HNTB in 2012.

**Vertical Alignment:**
The vertical alignment of the trail was guided by the AASHTO "Guide for the Development of Bicycle Facilities", 2012, 4th Edition design standards. The profile was designed to increase the constructability of the project (therefore helping keep costs down) and create an engaging profile for trail users to maximize their experience. There are no variances from the vertical geometry design standards noted previously.

**Typical Section:**
Pierce Street (Westbrook), Stillwater Drive (Westbrook), Rousseau Road (Windham), and Mallison Falls Road (Windham), and Depot Street (Windham):
The current design assumes 4" hot mix asphalt on 24" aggregate subbase course gravel – type "D". The only paving on the project (aside from the multi-use trail, cross trench (Stillwater Drive), sidewalks, and driveways) is within the existing roadway shoulders, in sawcut areas where curbing (various types) is being installed.

Main Street (Route 202) (Windham), and Bridge Street (Westbrook):
The current design assumes 6" hot mix asphalt on 24" aggregate subbase course gravel – type "D".

Sidewalks:
The proposed typical section will include a 2' pavement sawcut and gravel box (as described above), new vertical curb type 1 or curb type 3, and a 5.5' wide bituminous sidewalk on 12" aggregate subbase course gravel – type "D".

10' Multi-use Trail:
The current design assumes 3" hot mix asphalt on 12" aggregate subbase course gravel – type "D". The design assumes that the trail will be maintained year-round and will require winter maintenance vehicles.

Residential Drives:
The proposed typical section is 2" hot mix asphalt on 12" aggregate subbase course gravel – type "D".

Commercial Drives:
The proposed typical section is 3" hot mix asphalt on 11" aggregate subbase course gravel – type "D".

**Pavement Structure:**
Pierce Street (Westbrook), Stillwater Drive (Westbrook), Rousseau Road (Windham), and Mallison Falls Road (Windham), and Depot Street (Windham):
The proposed pavement structure is 4" hot mix asphalt.

Main Street (Route 202) (Windham), and Bridge Street (Westbrook):
The proposed pavement structure is 6" hot mix asphalt.

Sidewalks:
The proposed pavement structure is 2" hot mix asphalt.

10' Multi-use Trail:
The proposed pavement structure is 3" hot mix asphalt. The design assumes that the trail will be maintained year-round and will require winter maintenance vehicles.

Residential Drives:
The proposed pavement structure is 2" hot mix asphalt.

Commercial Drives:
The proposed pavement structure is 3" hot mix asphalt.

**Drainage/Hydrology:**
Multi-use Trail: The project will fully utilize (where feasible) the existing railroad ditch, cross pipes (under the railroad), catch basins and cross culverts along the roadway and railroad to address drainage on this project. Drainage improvements include new catch basins, revised ditch grading (to ensure positive flow), extensions to existing culverts as well as new culverts and pipes. The at-grade railroad crossing is proposed at an existing access road to ensure that no new crossings are created by the project.

Longitudinal drainage of the trail was a challenge given the rolling terrain of the exterior topography, matched with the relatively consistent grades of the rail bed. Ditches were used to keep the ballast freely draining between the trail and rail. New basins or open-ended culverts gather the ditch flow and transfer it to the exterior of the trail where it finds the existing drainage low points and is conveyed to the Presumpscot River.

Maine DOT project WIN 027694.00 has completed preliminary engineering for future improvements to the existing Inkhorn Brook stone box culvert (bridge #7756). They recommend a full replacement of the existing stone box culvert. The design and costs associated with replacing the stone box culvert are not associated with this project.

Maine DOT project WIN 027696.00 has completed preliminary engineering for future improvements to the existing Colley Wright Brook stone arch culvert (bridge #7757). They recommend the rehabilitation of the existing stone arch culvert. The design and costs associated with rehabilitating the stone arch culvert are not associated with this project.

**Guardrail:**
There is no guardrail associated with this project.

**Intersection Geometry:**
There are no proposed intersection modifications under this project. There will be four (4) new mid-block crossings (Depot Street and Main Street (Route 202) have existing mid-block crossings) associated with this project however, the existing curb line offset will remain unchanged.

There were sight distance concerns at the Mallison Falls Road at-grade crossing previously proposed in the 2012 Draft PDR plans. The currently proposed plan calls for a 40’ prefabricated steel pedestrian bridge at this location to alleviate concerns with the at-grade crossing.

**Right-of-Way:**
Numerous retaining walls have been removed from the original Draft PDR design (2012) to reduce project costs and increase the project’s constructability. The results of this change can be seen in an increased number of construction easements that will need to be obtained. At this time, there are approximately 74 parcels (38 in Westbrook & 36 in Windham) that require temporary construction easements (temporary grading rights) identified for this project. In addition, there are approximately 44 drainage easements (15 in Westbrook & 29 in Windham) that are required for the project. Some locations of permanent slope easements may also be required. We do not anticipate that any permanent right of way takes, or sidewalk easements will be required.

Further coordination may be required if utility pole relocations are needed during final design, which may result in additional Right of Way impacts. Pole locations and ROW Impacts will be determined prior to the draft Plan Impacts Complete (PIC) submittal.

**Utilities:**
Distribution of utilities exists only in the areas of local road crossings. They consist of the typical water, gas, sewer, storm drain and the associated aerial utilities. Whereas the trail crosses at grade at all these locations, utility conflicts have been minimized. Transmission types of utilities do exist amid the project. CMP has two (2) transmission corridors crossing the trail but both of which the trail does not impact (see the Utility Coordination section for additional information). The Portland Natural Gas Transmission System (PNGTS) crosses the trail; within the 500' right of way belonging to CMP. The Depth of the main is approximately 7' under the railroad. The trail crosses the gas main at grade; therefore, the trail does not impact this facility (see the Utility Coordination section for additional information).

**Other Design Issues – Blue Seal Business (located on the southwest corner of the intersection of the proposed trail and Main Street (Route 202) in Windham):**
Once additional survey was obtained for the south side of the north end of the project (up around the Blue Seal business), it was discovered that Blue Seal's loading zone (wooden platform) and storage area (ground level concrete pad) were located within the railroads right of way. This meant that there was inadequate space for the trail to be installed between the business and the future railroad (while maintaining an 11.5' distance from the nearest rail). Based on this information we provided the Maine DOT and Town of Windham with two options and met with them to discuss:

1) Remove the wooden loading platform (there is an existing concrete loading platform at the front of the building) and the concrete pad within the railroads right of way and install the proposed trail at the minimum railroad offset with back curb to reduce impacts to the existing business.
2) Keep the trail on the north side of the future tracks, which posed the following issues:
    - The Black Brook is running parallel with the future railroad for this section and would require the construction of a roughly 15'-20' tall retaining wall for +/- 200' to avoid significant impacts to the brook (and cross culvert).
    - The section of existing trail West of Route 202 is on the South side of the trail which means we would need to cross the railroad perpendicularly at the Route 202 intersection.

The Maine DOT discussed the two options internally and agreed that the trail should be placed on the south side of the tracks even though it would impact Blue Seal. The decision was based on reduced environmental impacts and the fact that we will still be within the existing railroad right of way.

The Maine DOT Railroad Department found that the Blue Seal business has an easement to utilize some of the railroads right of way (16'x260'). This "easement" can be revoked at anytime with 180 days' notice. The department will discuss internally to confirm that they would be willing to revoke the easement to allow the trail to be constructed on the south side of the future railroad. A decision (from the department) will be made prior to the draft PIC submittal.

An alternative plan was discussed early in the coordination efforts that included leaving two openings in the proposed railroad fence (one at the Blue Seal driveway & one at the concrete storage pad) and allowing Blue Seal to drive the forklifts around the trail on the future railroad bed to access their storage area behind the building. Due to the proposed ditching between the trail and the railroad (on the north side of the trail), we would need to include two "driveways" with culverts underneath them to ensure drainage could flow. In addition, we would need to install curb tip downs and slope the concrete storage area down to the trail as it is roughly 6" higher than the trail. This design was ultimately decided against as it did not seem feasible as a long-term solution, however, we wanted to make sure it was noted in this document.

## DRAFT PDR DISTRIBUTION TEAM COMMENTS AND RESPONSE

*(Minor edits and corrections can be made to the body of this document above without reference in this section. More significant comments that result in design or other changes should be noted in this section before the Final Distribution.)*

**Maine DOT comments provided on June 28, 2023 (GP provided comment responses to the Maine DOT on March 1, 2024):**

1. The Maine DOT Railroad team indicated that the minimum distance required between the nearest rail and any vertical obstruction (including the proposed 6' railroad fence) was 10.5 feet. The draft PDR plans show this distance to be from the edge of pavement (of the trail) to the nearest rail, which would result in the fence being installed at a 9.5' offset from the rail. The plans should be revised to maintain the minimum horizontal clearance to a vertical obstruction as noted above. The Maine DOT acknowledges that this distinction was not clear in their policy.
2. The Maine DOT Pavement team provided some minor comments to the PDR form which have been incorporated into the Final PDR submittal.
3. The Maine DOT Construction team provided the following comments:
   - Change item 403.208 to item 403.210 in the estimate.
   - Change item 411.09 to item 411.10 (Truck Measure) in the estimate.
   - Remove item 203.24 Common Borrow from the project based on the excessive amount of Common Excavation (item 203.20) on the project.
     - Based on our comment responses we have revised item 203.24 to be 100 CY just to get a bid price for the quantity (it may be required at the beginning of the project until a stockpile of common excavation can be gathered).
   - Update the spacing of bollards to be 4' instead of 3'.
     - Additional conversations between the Town of Windham, Gorrill Palmer, and the Maine DOT were had on this topic, but it was decided that 4' spacing would be required by the Maine DOT.
   - Extend the gravel subbase on the trail to the slope lines (daylight subbase) for the entire project limits.
     - This update was completed in the typical sections and in the estimate but not carried through the cross sections at this time. The cross sections will be updated prior to the draft PIC submittal.
   - Develop drainage connection details for pipe extensions prior to the draft PIC submittal.

- Show drainage in the cross sections and respond to other miscellaneous drainage comments regarding where water is flowing.
- Increase the vertical clearing limit to allow maintenance and emergency vehicles to access the trail as needed.
- Review locations of proposed fencing (cross sections vs plans).
- Questions regarding specified quantities for the following items (GP to review):
  - Item 610.08 – Plain Riprap.
  - Item 613.319 – Erosion Control Blanket.
  - Item 652.35 – Construction Signs.

4. The Maine DOT Geotechnical team provided the following comments:
   - All the walls should be buried to show frost protection. The Maine DOT requires a 4' burial depth in the Westbrook area to protect against frost. All the walls shall be updated to reflect this standard.
   - Due to excessive reinforcement required for precast concrete block gravity walls, we should consider using a reinforced soil slope instead of a wall. This item will be review by R.W. Gillespie prior to the draft PIC submittal.
   - Retaining wall detail sheets will be required for every wall on the project prior to the draft PIC submittal. The geosynthetic reinforcement should be included in the detail to understand the excavation required to install the wall and what impacts there would be to the existing railroad.
   - The proposed retaining walls located from Sta. 545+75 to Sta. 547+00 and Sta. 547+50 to Sta. 548+56 should be reviewed and potentially eliminated in favor of a 2:1 slope.

**Maine DOT comments provided on June 27, 2024:**

1. The Maine DOT requested that the plans (typical sections/detail sheets) and final PDR form be updated to include 3" HMA on 12" ASCG instead of 2"/12" respectively.
2. Maine DOT requested that we update the final PDR form to remove any references to HMA mix types and leave it to the 403 Specification.

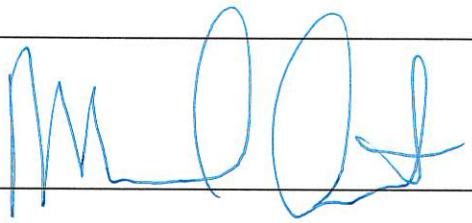
**Additional items incorporated into the Final PDR Plans:**

1. Additional survey was requested for a large portion of the project to better understand slope line and drainage impacts and to provide R.W. Gillespie with additional slope information. The survey update was received on March 21, 2023, and the slope lines and drainage were revised to match the existing conditions.
2. Flycatcher LLC completed an environmental summary for the project which included a findings memo, maps, photos, and supplemental forms for the project. This information was provided to Gorrill Palmer on September 9, 2023, and has been incorporated into the plans.

| **Comment Deadline** | **Date:** June 26, 2024 |
|---|---|

## APPROVALS

### Local Agency Approval

| **Preliminary Design Report Complete**<br><br>**LPA certified official** |  | **Date:**<br>7/8/24 |
|---|---|---|

### MaineDOT Approval

| **Preliminary Design Report Complete** | | **Date:** |
|---|---|---|

***For Large Culvert Projects, Preliminary Design Report Complete also signifies Plan Impacts Complete.***